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WITH THE AUTHOR'S COMPLIMENTS.

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A SERIES

OF

TWENTY-FIVE LAPAROTOMIES.

BY

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A SERIES OF TWENTY-FIVE LAPAROTOMIES.

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From January 1, 1886, to February 15, 1887, the writer has performed in all twenty-five abdominal sections. The cases may be divided into five distinct groups :

I. Exploratory incision.....	I.
II. For removal of ovarian tumors.....	17.
III. For removal of ovaries not the seat of tumor.....	4.
IV. For removal of tumors of the uterus.....	2.
V. For intestinal obstruction.....	I.

In Group II., in one of the cases, a uterine fibroid was removed as well as two ovarian tumors, so that Group IV. might properly be increased by one. In but one case was there a failure to complete the operation, and only one case proved fatal. The other cases all made good and complete recoveries. As we often learn more from our failures than from our successes I will relate the two unsuccessful cases in detail.

GROUP I. *Case 53.*—This case was of very great interest to me as illustrating how absolutely impossible it is to tell the state of affairs within the abdominal cavity without opening it. The patient was sixty-nine years old, and came to me first in September, 1885. She stated that six months before she had had inflammation of the bowels, and following this she noticed a tumor in the abdomen. This had grown quite rapidly, and gave her a good deal of pain and trouble. There was a hard, irregular tumor, the size of a large fist, in the lower part of the abdomen, which seemed to be freely movable within the peritoneal cavity. As it apparently was not adherent, and had a long pedicle, I suggested an exploratory incision and removal of the tumor if it could be done without too much risk.

The operation was not done until September 29, 1886. The tumor had grown somewhat in the interval and gave a good deal of pain at times. The abdominal walls were very loose, flabby and thin, and

the tumor could apparently be rolled around within the cavity. I made an incision in the linea alba, and continued on layer by layer looking for the sub-peritoneal fat. The patient was not emaciated but fairly well nourished for one of her years. One tissue I at first took for the peritoneum, although it had no fat over it, but cutting through it found a fatty layer which I was certain was the sub-peritoneal layer in question. Cutting through this I came upon the peritoneum closely adherent to it. The peritoneum seemed unusually thick, but on incising it I came to an open space which I of course supposed was the peritoneal cavity. Passing my finger into it I found that I was within the small intestine. The fatty layer was omentum, and the peritoneal cavity had been obliterated by the previous peritonitis, and the tumor instead of being free was fast everywhere. I freed a small portion of the surface of the intestine, brought it together and closed the wound. There was no after trouble. The temperature did not go above 99° , and she left for home none the worse for the operation, and content to pass the remainder of her days with the tumor.

This is the only time I can remember to have seen the sub-peritoneal fat entirely wanting. The apparent mobility of the tumor, which was so very deceptive, was largely due to the the great laxness and thinness of the abdominal walls. What the nature of the tumor was I do not know, but it felt like a fibroid.

GROUP II. *Case 39.*—This patient had a fifteen-pound ovarian cyst which was easily removed and the pedicle tied and dropped. She reacted nicely and bid fair to make a good recovery. The temperature on the second evening reached 102.4° . The next morning it was below 100° and did not rise again until the 27th day. On the 12th and 13th days it was perfectly normal. The pulse also kept at about 100, a little above the average rate (see table), but near where it had been before the operation. During the first few days she had some pain which was quieted by morphine. Also, some vomiting, but this was not constant or persistent. On the fourth day she took solid food and had very little pain. Gas passed freely from the bowels after an injection of *asafoetida*. On the 5th day a cathartic and two enemas were given with the effect of producing a free movement of the bowels. On the 7th and 8th days there was a

great deal of intestinal pain. There was a good deal of trouble in getting the bowels moved, but again on the 11th day they were thoroughly emptied. She sat up; was free from pain; ate a good dinner and seemed to be perfectly recovered. On the 12th day she was moved to a private room in the hospital. She was then able to walk about the room, and seemed to be entirely well. The next day she was not so well—some vomiting and intestinal pain. After this the difficulty in getting the bowels to act increased, though it could be done by the use of powerful cathartics and enemas. Her temperature went below normal, and she finally sank and died on the 28th day after the operation.

An autopsy showed a loop of intestines firmly attached to the pedicle and a mass of intestines bound to this loop and to each other by adhesive peritonitis. There was no actual obstruction but a part of the gut was gangrenous. I was several times tempted to reopen the abdomen and try and straighten out the obstruction, but there never seemed a clear indication for such an operation; for even on the day on which she died she had a large movement from the bowels. How to avoid such complication is a most difficult question in the after-treatment.

Since this case I have always tried to get the bowels moved on the second day; but this is often very difficult to accomplish, has the patient is nauseated and enemata do not always suffice.

Among the other ovariectomies there were several of considerable interest.

Case 36—was only sixteen years old and the tumor had been diagnosed as pregnancy by a general practitioner of the "new" school. The operation was easy but there occurred an extensive cellulitis in the pedicle which protracted the convalescence to nearly five weeks. The swelling in and around the pedicle finally all disappeared, and she made a perfect recovery. In *Case 41* the same thing occurred. *Case 38* was an undoubted fibroid of the ovary with much ascites. The operation was easy and recovery perfect and prompt.

Case 40—was exceedingly difficult, as the tumor had existed for a long time, and adhesions were very strong and numerous. It took nearly one hour to separate the cyst from its attachments, and many

ligatures were left in the abdominal cavity. After she went home she had a slight attack of peritonitis, but is now perfectly well.

Case 43—was also a very difficult and interesting case. The tumor was quite small, with very thin walls and firmly adherent in the pelvis. It was only after a great deal of enucleating and tearing that it could be brought up enough to tie. The abdominal walls were very fat and rigid. She recovered, except that an abscess formed deep in the pelvis. It fortunately broke through the abdominal wound. A sinus formed and exists to this day, and I am at present trying to induce it to heal. The patient's general health is perfectly good, and she is entirely free from the severe pain which formerly rendered her life a burden.

Cases 45 and 47—were cysts of the broad ligament or par-ovarian cysts, filled with clear water; with thin walls. The operation for their removal only took a few minutes, and recovery was rapid. The diagnosis of such cysts is usually easy. The walls are thin and flaccid, fluctuation very marked, and the patient's general condition does not usually suffer much. Both these cases had been diagnosed as ascites, a mistake which, I imagine, is very common.

The other ovariectomies were average cases, and presented no points of special interest except *Case 60*. Here the diagnosis of multilocular ovarian cyst was made and proved correct. There were two ten-pound tumors which were easily removed. The contents were very thick, almost like cold glue, and it was necessary to empty the cysts with the hands as the stuff would not run. The cyst walls were very thin and ruptured, allowing a certain amount of material to get into the peritoneal cavity, so I washed out the cavity with water at 105°. I found a fibroid as large as a fist deep behind the uterus. It was attached to the fundus uteri by a short, thick pedicle. I put on the clamp and cut off the tumor. She has made a good recovery, and is cured of her retroversion as well.

GROUP III.—The removal of ovaries and tubes not the seat of tumors may be one of the simplest or one of the most difficult operations in abdominal surgery. In my hands it has been unsatisfactory, as the history of the cases in Table 2 will show. The number of cases is too small to admit of any general deductions.

Case 44—had been suffering from severe pain in the ovarian region for six years. There was no evidence of pelvic inflammation, and the ovaries could not be touched. I sewed up a badly lacerated cervix; a year later no improvement having occurred, and her trouble having resisted a long course of electricity, counter irritation, forced feeding and massage with other appropriate treatment, I removed the left ovary. The ovary was small and non-adherent, and the operation was exceeding simple. She made a very good recovery, and for a few weeks was entirely relieved of pain, but it soon came back in another place, and although not quite so severe, she is by no means cured.

Case 46.—This patient was in the hospital ward for a long time. There was a history of long-continued uterine disease. The uterus was somewhat retroverted and there was prolapse of the left ovary with old pelvic peritonitis. Dysmenorrhœa was severe and getting worse month by month. I removed the ovary and tube with some difficulty, as they were firmly adherent. The other ovary I left alone as it was not at all diseased, and I had promised her faithfully to do so if I found it healthy. She slowly improved after this operation and left the hospital much better; but from a recent letter I learn that the cure is not complete and that she still suffers somewhat at her periods. Perhaps the mistake was in not removing both ovaries.

Case 56—was brought into the hospital for intoxication which she said was induced by alcohol taken to relieve pelvic pains. The ovaries were both prolapsed, double their normal size, exquisitely sensitive, and firmly bound down in the pelvis. A long course of treatment failed to afford the slightest relief. She was a pauper, unable to work, and as a last effort at becoming self-supporting she consented to the removal of the tubes and ovaries. They were removed with difficulty, and she made a good recovery. She still complained of pain, but the old intense pain in the pelvis was relieved. I have lost sight of her and do not know the ultimate result.

Case 58.—This patient had been a sufferer for years with a large mass of exudation on each side and behind the uterus. I diagnosed pelvic peritonitis with involvement of ovaries and tubes. The right ovary and tube were adherent, but removed without much difficulty. The tube was distended with fluid to the size of a large thumb. The

left tube was distended so as to hold two ounces of fluid. It burst and I did not succeed in getting it all out. The ovary on that side was deeply buried in a mass of adhesions, and I found great difficulty in removing it, but finally succeeded. She made a fair recovery, but there was some inflammation on the left side, and there is now a mass of exudation larger than before the operation. She has a good deal of pain and is steadily losing ground. Before the operation there was a trace of albumen in the urine, but soon afterwards the action of the kidneys nearly ceased and the amount of albumen largely increased. The albuminuria continues intermittently up to the present, sometimes as much as one-third albumen being found. Evidently the kidneys are affected, and the possible benefits of the operation will be lost on this account.

This is certainly not a very encouraging experience, and from some cases which I have seen, where similar operations had been performed by others, I know it is not unique. In future in cases seeming to demand this operation I shall give a very guarded prognosis as to the ultimate cure. I am also doubtful as to the propriety of removing only one ovary.

GROUP IV.—I have so recently written a full account of the cases in this group* that a few words here will suffice.

Case 50—was a medium-sized fibroid growing from the fundus uteri. It caused great pain and suffering, and the patient was willing to run any risk for the sake of getting rid of it. I removed it, treating the pedicle with a clamp, and she made a good recovery and remains perfectly well.

Case 54—was of a similar nature, only that a symmetrical enlargement of the body of the uterus made up the tumor. There was an abscess cavity in the tumor, which contained two quarts of pus. I did supra-vaginal hysterectomy, and the patient made a good recovery. She writes me that there is still a sinus leading from the abdominal wall in front through into the vagina. As there is no discharge coming from it I do not imagine that it will do any harm, and could probably be easily closed.

GROUP V.—The single case in this class does not properly belong to a gynecologist, but as I went a long distance to see her, and

**Am. J. Obstet.*

as she had formerly been a patient of mine, I decided to operate, though I prefer not to go outside of the pelvic organs in my work. She was a strong young woman who had not had a movement from the bowels for two weeks or more; the time was not known exactly. Cathartics and injections had failed. There was great pain and tenderness over the abdomen, moderate distension but no distinct tumor. There had been fecal vomiting for several days, and no food had been retained. The pulse was rapid and temperature elevated. I opened the abdomen and passed the entire intestinal tube through my fingers from the duodenum to the colon. As the intestines were removed from the abdomen they were enveloped in warm carbolized cloths. As I approached the ileo-cecal valve the intestine was much distended, and I thought there was trouble there, though I could not detect any distinct obstruction. In order to admit of emptying the bowels, as I felt sure there must be some obstruction in the colon, I drew a knuckle of intestine into the lower angle of the abdominal wound and sewed it there after the abdomen had been closed, and in it made a very small artificial anus. She recovered rapidly. There was an immense amount of fluid fecal matter discharged through the artificial opening. After a week or ten days she had a natural movement, and the amount passing by the wound diminished. Gradually the opening grew smaller, and finally, after the failure of several attempts to close it by plastic operations, closed by itself entirely. The patient is now perfectly well and acting as nurse in a hospital.

What the obstruction was, I do not know; but I am certain that had no operation been done she would not have lived many days. Whether the making of an artificial anus under these circumstances is generally justifiable I will not attempt to decide, but the result in this case was certainly satisfactory.

The last few years have seen a great change in the results obtained by American laparotomists. Up to that time there was a tendency to the opinion that something in our climate, the peculiar nervous organization of our women, or some unknown condition, prevented our obtaining the results, more especially in ovariectomy, so generally obtained in Europe, particularly in England.

With the advent of a younger set of operators, trained in more perfect methods and operating under better conditions, this has been

shown to be a mistake, and the fact has been established that in America, the birthplace of abdominal surgery, as good percentages of recovery can be obtained as anywhere else.

The fault in the older bad results was with the operators and their methods, and not with the women and the climate. This may seem a bold statement, but it can be proved by facts. Take for instance the tables of ovariectomies by American operators, lately published in the *Pittsburgh Medical Review*. We can there select 100 cases operated upon in 1886 by twelve different operators, a consecutive series in each case, with only eight deaths. This is a showing as good as can be found anywhere, and is better when we consider that of the twelve reporters nine had no deaths, the fatal cases being charged four to Dr. Homans, three to Dr. Goodell, and one to the writer; these three operators having the majority of the one hundred cases. Not one of these deaths was from sepsis or any strictly preventable cause; several of them were desperate cases, and died on the table.

Still there is room for improvement, and it remains for the general profession to do their part more perfectly, and this they can do by following Mr. Lawson Tait's advice in a recent number of the journal referred to. He says:

"But I must point out to you, as a set-off against this, that the main element of success in such a line of practice, as in almost any other of a similar nature, is that it should fall into the hands of a few men, and that it should not be dabbled in by any man who may happen to have a case. The publication, therefore, of such tables will show how essential for success it is that the work should be limited in the operators. The whole profession will, on your side of the Atlantic as already with us, soon come to regard it as a matter not only of necessity and right, but as being of the first and highest interest to every member of their profession, that such means should be taken as will contribute in the greatest degree to the best interests of the patients. This is the line upon which alone we can advance the profession to which we are all attached."

Certainly there is reason in this. Specialists do not like to urge it upon the profession because their motives are likely to be impugned. The more I operate the more convinced I am that

experience counts for more in laparotomy than in any other branch of surgery. Success depends so much on nicety of detail, as well as on being prepared to meet the most unexpected and unlooked-for complications, that only a large number of operations can put a man in a position to be considered an expert. Unless the profession will uphold the hands of those who have given themselves up to this work the best results cannot be obtained.

Another way in which the general profession may greatly aid the operators, is in sending their cases early for operation. I think it may be laid down as a rule that every ovarian cyst should be removed as soon as it is discovered, unless there is some special reason for not doing so. The old idea that a certain length of time is necessary in order to harden the peritoneum and get it ready, so to speak, is fallacious. The peritoneum is one of the most tolerant of tissues of everything but dirt. Keep it clean and you can do anything with it. This is proved by the almost uniform success of such operations as the removal of the ovaries, where there is no tumor. Early operations are as a rule much simpler and less dangerous, being less likely to be complicated by adhesions, and are done in patients better fitted to stand the shock. Nor is this the only consideration. A woman with an ovarian tumor is in constant danger. Rupture of the cyst, peritonitis, suppuration of the cyst, and hemorrhage into the cyst, are all accidents which I have seen occur in comparatively small cysts. I once put a patient on the table to operate, only to find that the cyst had ruptured the night before. A small cyst, too, of only five pounds ; peritonitis had already begun, but she recovered.

As to tapping I am happy to say that it is rapidly going out of date ; though only last week I heard of a case now dying of septicæmia due to suppuration of the cyst following tapping ; and this same accident I have seen follow several times, though not in my own practice. Tapping a multilocular ovarian cyst is fully as dangerous as an operation or even more so.

A few words as to my own methods may not be without interest. All the operations are done with careful attention to the rules of antiseptic surgery. No spray is used, but hands, instruments, sponges, ligatures and everything about the patient are cleansed with the

most scrupulous care; soap and water and a nail brush being put at the head of the list of antiseptics. For fear that some germs may escape the cleaning process, antiseptics are used freely; corrosive for the hands; hydro-naphthol and carbolic acid for sponges and instruments.

All but three of this series were operated on in the special laparotomy pavilion attached to the Buffalo General Hospital. This cottage was erected by the liberality of one of our charitable ladies and is known as the Gates Cottage. After nearly two years of use it has shown itself to be perfectly adapted to its purposes. As it only receives one at a time, patients are moved at the end of a week to the hospital.* It is proposed this summer to erect an addition which will hold four convalescents. A great advantage is also obtained in having trained assistants. Those who have only operated with assistants unused to the work and unaccustomed to the particular methods of the operator will hardly appreciate this advantage.

The after-treatment, on which I lay great stress, can be much better carried out under the discipline of a hospital than in private. For the first forty-eight hours the patient is greatly restricted as to fluids and is entirely cut off from food. By thus depriving the system of water, the lymphatics are stimulated to take up any fluids remaining free in the peritoneal cavity, which might furnish a residue for the growth of septic germs. The necessity for drainage is thus diminished. It will be noted that drainage-tubes were not used in any of these cases. Morphine is given sparingly and not as a routine practice. Some of the cases have had none and some only a single dose. Stimulants are seldom required.

The course of the pulse and temperature after ovariectomy are interesting and instructive. In order to illustrate what might be called the normal curve I have made a composite or average table from the tables of ten favorable cases. By them it will be seen that there is always a rise on the second evening after the operation and that the temperature does not become normal until the eighth day. The temperature runs generally higher in young people than in those

* By the terms of Mrs. Gates' gift the poor are to receive the advantage of this cottage gratis.

(TABLE 1.)
OVARIOTOMIES.

No.	Date of Operation.	Age	Married or Single.	No. of Child'n.	No. of Tappings.	Time since first noticed.	Size and Nature of Tumor.	One or Both Ovaries.	Adhesions.	Treatment of Pedicle.	Drainage.	Hosp't'l or Private.	Result (Recovery or Death.)	Remarks.	Family Physician.
36	Jan. 11, '86.	16	S.	0	0	15 mos.	12-lb. Multiloc.	One.	None.	Tied and Burnt.	None.	H.	R.	Cellulitis in Pedicle.	
37	Feb. 10, '86.	29	M.	1	0	4 mos.	7-lb. Multiloc.	One.	None.	Tied and Burnt.	None.	H.	R.	Ascites.	Dr. H. D. Walker.
38	Feb. 18, '86.	54	M.	10	0	3 yrs.	5-lb. Solid Fibroid.	One.	None.	Tied and Burnt.	None.	H.	R.	Obstruct'n of bowels	Dr. J. C. Green.
39	Feb. 25, '86.	48	M.	9	0	8 mos.	15-lb. Multiloc.	One.	Slight.	Tied and Burnt.	None.	H.	D.	Difficult one.	Dr. D. W. Harrington
40	Mar. 25, '86.	56	M.	6	0	4 yrs.	40-lb. Multiloc.	One.	Extensive, firm.	Tied and Burnt.	None.	H.	R.	Cellulitis, slight.	
41	April 8, '86.	18	M.	0	0	2 yrs.	22-lb. Multiloc.	One.	Slight.	Tied and Burnt.	None.	H.	R.	Deep Abscess.	
43	May 5, '86.	34	M.	0	0	18 mos.	½-lb. Multiloc.	One.	Firm, Pelvic.	Tied and Burnt.	None.	H.	R.		
45	May 19, '86.	59	S.	0	0	18 mos.	20-lb. Par-ovarian.	One.	None.	Tied and Burnt.	None.	H.	R.		
47	June 2, '86.	37	S.	0	0	6 yrs.	29-lb. Par-ovarian	One.	None.	Tied and Burnt.	None.	H.	R.		Dr. D. W. Harrington
48	June 12, '86.	28	M.	1	0	4 mos.	10-lb. Monocyst.	One.	None.	Tied and Burnt.	None.	H.	R.		Dr. H. Wilson.
49	June 18, '86.	50	M.	6	0	8 yrs.	20-lb. Doublecyst	One.	None.	Tied and Burnt.	None.	H.	R.		
51	Sept. 27, '86.	57	S.	0	0	16 mos.	8-lb. Monocyst.	One.	None.	Tied and Burnt.	None.	P.	R.		
52	Sept. 28, '86.	53	M.	13	0	9 mos.	13-lb. Multiloc.	One.	None.	Tied and Burnt.	None.	H.	R.		Dr. A. M. Barker.
55	Oct. 14, '86.	57	S.	0	1	3 yrs.	30-lb. Multiloc.	One.	None.	Tied and Burnt.	None.	H.	R.		Dr. J. P. Colgrove.
57	Oct. 28, '86.	21	S.	0	1	6 mos.	9-lb. Multiloc.	One.	None.	Tied and Burnt.	None.	H.	R.		Dr. T. Clark.
59	Jan. 13, '87.	25	M.	0	0	2 yrs.	9-lb. Multiloc.	One.	Omental.	Tied and Burnt.	None.	H.	R.		Dr. G. D. McCullum.
60	Feb. 13, '87.	48	M.	1	0	5 mos.	20-lb. Multiloc.	Both.	None.	Tied and Burnt.	None.	H.	R.	Fibroid of Uterus. Removed same time.	Dr. J. H. Sutherland.

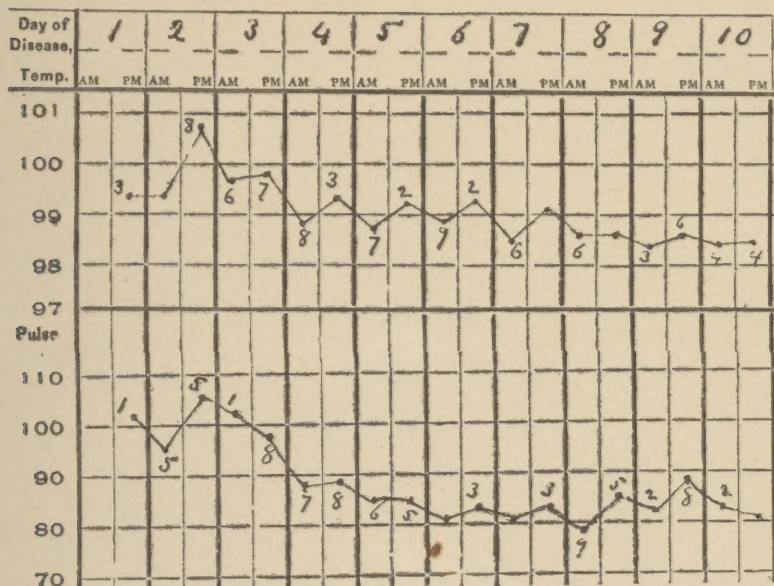
(TABLE 2.)
LAPAROTOMY FOR REMOVAL OF OVARIES NOT THE SEAT OF TUMOR.

No.	Date of Operation.	Age.	Married or Single.	No. of Children.	Duration of Disease.	Pathological Condition or Symptoms necessitating Operation.	One or Both Ovaries.	Adhesions.	Treatment of Pedicle.	Drainage.	Hosp't'l or Private.	Result of Oper. Recovery or death.	Effect of Operation upon the condition requiring it.	Family Physician.
44	May 12, '86.	43	M.	2	6 years.	Ovarian Pain.	One.	None.	Tied, dr'pp'd	None.	H.	R.	Temporary improvement	Dr. W. H. Gail.
46	May 27, '86.	27	S.	0	4 years.	Pelvic Peritonitis, with Prolapsus of Ovary.	One.	Extensive.	Tied, dr'pp'd	None.	H.	R.	Improvement—permanent to date.	
56	Oct. 21, '86.	25	S.	0	2 years.	Pelvic Peritonitis, with Prolapsus of Ovary.	Both.	Extensive.	Tied, dr'pp'd	None.	H.	R.	Improvement—permanent to date.	
58	Jan'y 6, '87.	34	M.	0	Several	Pelvic Peritonitis and Salpingitis Ovaritis.	Both.	Very dense.	Tied, dr'pp'd	None.	H.	R.	None.	Dr. Ashley.

(TABLE 3.)
LAPAROTOMY FOR OTHER PURPOSES THAN THE REMOVAL OF OVARIES.

No.	Date of Operation.	Sex.	Age.	Duration of Disease.	Pathological Condition or Symptoms necessitating Operation.	Nature of Operation.	Drainage.	Hospital or Private.	Result of Operation: (Recovery or Death.)	Effect of Operation upon the condition requiring it.	Family Physician.
42	April 17, '86.	F.	28	2 weeks.	Intestinal Obstruction.		None.	P.	R.	Cure.	Dr. T. S. Thomas.
50	June 22, '86	F.	42	1 year.	Fibroid of Uterus.	Supra-Vaginal Hysterectomy.	None.	H.	R.	Cure.	Dr. D. D. Loop.
53	Sept. 30, '86	F.	69	18 mos.	Solid Tumor.	Exploratory Incision.	None.	P.	R.	No Effect.	Dr. E. S. West.
54	Oct. 7, '86.	F.	38	8 years.	Fibroid of Uterus.	Supra-Vaginal Hysterectomy.	None.	H.	R.	Cure.	Dr. E. Rood.

over fifty. The tables which are appended give the principal points of all the cases.



COMPOSITE PULSE AND TEMPERATURE CHART—THE AVERAGE OF TEN CASES.

The highest temperature was 102.5° on the second evening, and the highest pulse was 145; the next highest being only 122.

